Determination of Public Land (Rangeland) Health for 64056-ROCKING CL-MELINA

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these Standards.

Field assessment worksheets and other available data which evaluate the local indicators, were completed for this allotment. Based on the assessments, it is my determination:

1. Public Lands within the Rocking CL - Melina Allotment #64056 #4 pasture do not meet the Upland and Biotic Standards; and 2. The remaining Public Lands within the Rocking CL - Melina Allotment #64056 meet the Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) the Riparian Standard (on identified sites).

/s/ T. R. KREAGER	10/21/2003
Assistant Field Manager	Date

Standards of Public Land Health
Evaluation of 64056-ROCKING CL-MELINA Allotment
[08/13/2003]

The Roswell Field Office conducted rangeland health assessments at four study sites within the ROCKING CL-MELINA Allotment #64056. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64056-#1-F046 (*)	X			X			N/A		
64056-#2-F047	X			X			N/A		
64056-#3-F048	X			X			X		
64056-#4-F049 (*)		*	X			X	N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for the Melena allotment, #64056; 10 of these indicators assessed soil/site stability, 11 assessed hydrologic functions and 13 assessed biotic integrity. These qualitative assessments, along with quantitative information from long-term monitoring studies on four (4) study areas, were utilized to assess the rangeland health of the public land within the allotment. These quantitative evaluations were performed by the Roswell Field office staff starting in the early 1980's. These included ground and vegetative cover and composition, production, frequency, and ecological condition as calculated from these collections which have been scheduled approximately every 5 years.

Allotment 64056 lies northeast of Roswell, south of Highway 70; the majority of the allotment is between the "Old Clovis Highway and Bitter Lakes National Wildlife Refuge. No grazing has been authorized within the allotment since November, 1996 and the allotment was closed to grazing via a Resource Management Plan Decision in 1997. Pastures 2, & 3 are Salty Bottomland SD-3 Range Sites, while Pasture 1 is considered to be a Gravelly SD-3 range site. Pasture 4 is a Sandy SD-3 Range site. Pasture 1 includes the southeast portion of the Dunnahoo Hills. Pasture 1 was included in an area used by the NMMI for field practice for many years and is also often used for recreation. Unauthorized OHV use and illegal dumping is a problem across the allotment. The north

end of the allotment (Pasture 4) is also impacted by a Sand and gravel operation on private lands. Some Oil & gas developement has occurred on the allotment. The entire allotment is bisected by the Santa fe Railroad. Fencing throughout the allotment is in poor repair and supplemental water via pipelines and water wells is non existent.

The #1 pasture has rated moderate for bareground and moderate to extreme for gullies. The #1 pasture has experienced drought, water erosion, and wind erosion conditions that has possibly increased the amount of bare ground. The #1 pasture has experienced water erosion that has created gullies in the area. The amount of gullies present indicate that active erosion is occurring and vegetation cover is intermittent. Sand and gravel, clay and silt that are located on the surface are Quaternary alluvium and pediment deposits. Rock outcrops of gypsum and dolomite that occurr in the area are from the Seven Rivers Formation.

The #3 pasture has rated moderate for pedestells. The #3 pasture has experienced drought and wind and water erosion in the area that has possibly decreased the amount of plant cover and possibly decreased infiltratioin into the soil that may have increased the occurrence of pedestalling on plants and rocks. Water and wind has eroded the soils which has the affect of elevating the plants and rocks to form pedestalls. Sand and gravel, clay and silt that are located on the surface are Quaternary alluvium, pediment and terrace gravel deposits. Rock outcrops of gypsum and dolomite that occurr in the area are from the Seven Rivers Formation.

The #4 pasture has rated moderate for water flow patterns, extreme for bare ground, moderate for wind-scoured blowouts and/or depostion areas, moderate for litter movement, moderate to extreme for soil surface resistance to erosion, moderate for soil surface loss or degradation, moderate to extreme for litter amount, and moderate for physical and biological crusts. The water flow patterns indicate that erosion is minor with some instability and deposition. The increase in bare ground amount indicates that the drought conditions, water erosion, and wind erosion have had a negative effect on the area. The decrease in the strength of the soil crusts and/or the absence of soil crusts, wind velocity, surface dryness, surface roughness, and amount of surface cover has possibly increased the amount of wind-scoured, blowouts and deposition areas in the area. The drought and the affects of water and wind erosion has possibly had a negative affect on the amount of litter present and litter movement. Litter is loosely concentrated near and around obstructions and litter has been displaced. There has been a reduction in soil surface resistance to erosion that has resulted from drought conditions, wind erosion, and water erosion and other factors that have reduced the stabilizing agents such as aggregated organic matter at the surface and decreased the adhesion of organic matter to surface soils. Soil surface loss and degradation has occurred in interspaces with degradation beneath plant canopies where soil structure is degraded and soil content matter is reduced. The litter amount has decreased from a result of drought conditions or water availability. The litter amount present suggests that the drought has had a negative affect on the growing conditions which decreases the amount of litter that is produced. Physical and biological crusts occur in protected areas with a minor component in interspaces, which has a moderate affect on soil stability and water infiltration into the

soils. Sand and gravel, clay and silt that are located on the surface are Quaternary alluvium, pediment and terrace gravel deposits. Rock outcrops of gypsum and dolomite that occurr in the area are from the Seven Rivers Formation.

On this allotment, past use and precipitation patterns are the driving factor on for the Biotic inidicators. However the allotment is used extensively for illegal OHV use ; not only on the gravelly soils but over the salt flats next to the Pecos River. This OHV has negative impacts to the federally threatened Interior Least Tern. A project has been developed to mimimize this problem. Pasture #1 has the most amount of OHV use which has caused more than expected erosion for this type of range site.

Within pasture # 4 , mesquite hummucks provide wildlife habitat for those species that tend to utilize those habitats, but those wildlife species that inhabit grassland ecosystems have been greatly impacted by the density of invading shrubs, the railroad, and a sand & gravel operations.

The vegetative components of the functional/structural groups are here, however the total amount of production has been limited by the reduced amount of precipitation that has been received over the course of the past few years. In Pasture 1, vegetative cover was adequate as compared to the Gravelly Range Site Description, but is being adversely impacted by OHV use. Pasture 2 had good levels of vegetation production and biodiversity. Ground cover is good. The vegetation in Pasture 3 is definitely being adversely impacted by OHV use, and to some extent, may be influenced by the berm effect of the railroad grade. The soils here have a very high saline content, which in turn, effects the type of vegetation that can grow here. More salt cedar were noted in this pasture, especially close to the Pecos River than in Pastures 1 and 2. Due to the level of soil capping, high intensity storm events create a situation in which the precipitation can not be absorbed, and washes across the soil. Plants were noted with some pedestralling, while others appeared to have either been flooded or had soil washed over them through an eddy effect. Pasture 4 has a high level of mesquite, with few grass species apparent within the inner dune areas. The combination of the Sand and Gravel operation and the railroad berm is influencing the amount of overland flow of any precipitation received on the north end of the allotment. Mesquite has been a strong component in the vegetative community in this pasture for the last 30 years, consistently making up from 66 to 90% of the annual production. A vegetative treatment of the mesquite, either by herbicide or mechanical methods or a combination of the two would have to be very intense, and may not be cost effective.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Bare Ground
- Gullies
- Soil Surface Resistance to Erosion
- Functional/Structural Groups
- Litter Amount

- Annual Production
- Invasive Plants

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: The public lands within this allotment are not currently authorized for grazing. The party who holds the private lands and base properties with the allotment has not made application for grazing, or indicated an interest in grazing. Due to the high level of mesquite within Pasture #4, and due to the existing level of surface disturbance having already occurred, an opportunity may exist to try a combination of mesquite treatments.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64056-#1-F046			
Legal Land Desc	SENW 16 0090S 0250E Meridian 23	Acreage	347
Ecosite	042CY001NM GRAVELLY SD-3	Photo Taken	Y
Watershed	13060007010 GOPHER		
Observers	R. FRENCH & H. MILLER	Observation Date	08/28/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	TPD	Soil Taxon Name	TORRIORTHENTS
Texture Class	NM644 GR-FSL	Soil Phase	TORRIORTHENTS-PHILDER-ROC
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	11.39	NOAA Growing Season Precipitation	7.05
NOAA Avg Annual Precipitation	12.17	NOAA Avg Growing Season Precipitation	9.81
Disturbances and Animal Use:	This site has alot of unauthorized OHV use. and the gravelly hills are evidently used for target practice and illegal trash dumping. Allotment is not permitted for livestock.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills				X	
Comments:	Most are in unusual locations & are occurring due to past or present OHV use					
S H	Water Flow Patterns				X	

Comments:	Dependent upon on ground cover. The lack of precipitation which affects % ground cover and bare ground increases water flow patterns especially in open areas.					
S H	Pedestals and/or Terracettes					X
Comments:						
S H	Bare Ground			X		
Comments:	The Percentage of cobble is higher than expected, and vegetation lower.					
S H	Gullies		X			
Comments:	gullying as a result of OHV					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:						
S H B	Soil Surface Resistance to Erosion					X
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:						
S H B	Compaction Layer					X
Comments:	OHV use is influencing this component.					
B	Functional/Structural Groups					X
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:						
B	Annual Production			X		
Comments:	Low annual production due to drought conditions; below average long term and short term precipitation.					
B	Invasive Plants			X		

Comments:	Mesquite invasion is prevalent					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts					X
Comments:	No crusts here, limited due to site capability					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations					X
Comments:	Fragmentation and displacement of wildlife is due to OHV use in the area.					
B	Special Status Species Habitat					X
Comments:						
B	Special Status Species Populations					X
Comments:						

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	1	3	5
H	Hydrologic	0	1	1	3	6
B	Biotic	0	0	2	2	9

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		1	1	8
Hydrologic		1	1	9
Biotic		0	2	11
Site Notes: This parcel lends itself to pressures and impacts from the general public due to its proximity to Roswell and the lack of adequate fencing to control OHV use. The area is not currently permitted for livestock grazing. Illegal dumping, target shooting and 4 wheeling along with tresspassing onto private lands are the primary impacts associated with this pasture. Due to the amount of activity, some wildlife displacement has and will continue to occur.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64056-#2-F047			
Legal Land Desc	NWNE 29 0090S 0250E Meridian 23	Acreage	971
Ecosite	042CY036NM SALT FLATS SD-3	Photo Taken	Y
Watershed	13060007010 GOPHER		
Observers	R. FRENCH, H. MILLER	Observation Date	08/14/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	HhA	Soil Taxon Name	HOLLOMEX
Texture Class	NM644 L	Soil Phase	HOLLOMEX
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	11.39	NOAA Growing Season Precipitation	7.05
NOAA Avg Annual Precipitation	12.17	NOAA Avg Growing Season Precipitation	9.81
Disturbances and Animal Use:	No Stock are present or authorized on this allotment. Dumping of trash is common along the Railroad berm, generally on the west side		

Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns					X
Comments:						
S H	Pedestals and/or Terracettes					X
Comments:						

S H	Bare Ground					X
Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:	Litter Movement is None to slight edging toward slight					
S H B	Soil Surface Resistance to Erosion					X
Comments:	Soil surface is being stablized by organic matter and biological crusts.					
S H B	Soil Surface Loss or Degradation					X
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups					X
Comments:	Very low shrub numbers, grass cover is very good, with some scattered cholla and prickly pear.					
B	Plant Mortality/Decadence					X
Comments:	Less than 15% decadent plants.					
H B	Litter Amount				X	
Comments:	Low production does result in low amount of available litter.					
B	Annual Production				X	
Comments:	Production is being limited by drought, production is not being supported by sub-irrigation in this location.					
B	Invasive Plants					X
Comments:						
B	Reproductive Capability of Perennial Plants					X
Comments:	Only affected by low precipitation.					

S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat					X
Comments:						
B	Wildlife Populations					X
Comments:						
B	Special Status Species Habitat					X
Comments:						
B	Special Status Species Populations					X
Comments:						

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	0	10
H	Hydrologic	0	0	0	1	10
B	Biotic	0	0	0	2	11

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets

Soil		0	0	10
Hydrologic		0	0	11
Biotic		0	0	13
Site Notes:				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64056-#3-F048			
Legal Land Desc	NENW 22 0090S 0250E Meridian 23	Acreage	901
Ecosite	042CY036NM SALT FLATS SD-3	Photo Taken	Y
Watershed	13060007010 GOPHER		
Observers	R. FRENCH, H. MILLER	Observation Date	08/14/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	HhA	Soil Taxon Name	HOLLOMEX
Texture Class	NM644 L	Soil Phase	HOLLOMEX
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	11.39	NOAA Growing Season Precipitation	7.05
NOAA Avg Annual Precipitation	12.17	NOAA Avg Growing Season Precipitation	9.81
Disturbances and Animal Use:	Offroad Use is evident and may be adversely affecting this site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:	This is being influenced by the channelization of culvert and railroad berm west of the study location.					
S H	Bare Ground				X	

Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion					X
Comments:	Intact - Bio crusts are present and very active.					
S H B	Soil Surface Loss or Degradation					X
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	This indicator is trending toward slight.					
S H B	Compaction Layer					X
Comments:	Even the OHV use only slightly breaks the soil cap in this area. This location is supported by sub irrigation.					
B	Functional/Structural Groups				X	
Comments:	Shrub variabilty is low, ie this site is lacking in shrub diversity.					
B	Plant Mortality/Decadence					X
Comments:	Decadence is spotty < 10%.					
H B	Litter Amount				X	
Comments:						
B	Annual Production			X		
Comments:	Production limited by drought conditions, although soil moisture was present.					
B	Invasive Plants				X	
Comments:	Salt cedar is present, but not limited only to disturbed sites. Salt cedar is present along the river and along fence lines; some were scattered across the study site/pasture.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Reproduction may be limited by reduced sub irrigation - seed may not be able to germinate in soil crust, hoof action might help to break soil capping.					

S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat					X
Comments:						
B	Wildlife Populations					X
Comments:						
B	Special Status Species Habitat					X
Comments:	Receation Use and OHV may disturb the salt flats and habitat for the Interior Least Tern					
B	Special Status Species Populations					X
Comments:	Interior least tern habitat is here. populations are located on an intermittent basis and seem to be an outflow from the Refuge.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	2	7
H	Hydrologic	0	0	1	5	5
B	Biotic	0	0	1	3	9

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need	Meets

			More Info	
Soil		0	1	9
Hydrologic		0	1	10
Biotic		0	1	12
Site Notes: This location is considered a Salty Bottomland SD-3, but the saline content of the soil is very high. Soil capping is very strong and may be preventing germination of seedlings. It was noted that when any excess precipitation came, much of it moved across the surface of the soil, causing pedestalling of some plants, while in other locations plants were either flooded by surface flow or soil was deposited on the plants by an eddy effect.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64056-#4-F049			
Legal Land Desc	SENW 10 0090S 0250E Meridian 23	Acreage	1386
Ecosite	042CY004NM SANDY SD-3	Photo Taken	Y
Watershed	13060007010 GOPHER		
Observers	R. FRENCH, H. MILLER	Observation Date	08/14/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	DsA	Soil Taxon Name	DONA ANA
Texture Class	NM644 SL	Soil Phase	DONA ANA
Texture Modifier	NM644 SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	11.39	NOAA Growing Season Precipitation	7.05
NOAA Avg Annual Precipitation	12.17	NOAA Avg Growing Season Precipitation	9.81
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns			X		
Comments:	Water Flow Patterns are being influenced by mesquite hummocks.					
S H	Pedestals and/or Terracettes				X	

Comments:	Pedestals and/or Terracettes are evident in exposed flow areas, created by mesquite hummocks.					
S H	Bare Ground	X				
Comments:	Poor cover conditions exist between the mesquite hummocks.					
S H	Gullies					X
Comments:	This site is not condusive to gullies because of slope - the adjacent Rail road berm is influencing/stopping overland flows.					
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:						
H	Litter Movement			X		
Comments:						
S H B	Soil Surface Resistance to Erosion		X			
Comments:						
S H B	Soil Surface Loss or Degradation			X		
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					
Comments:	Due to mesquite hummocks and low precipitation , grass and forb production and composition is low.					
S H B	Compaction Layer				X	
Comments:	This indicator is moving toward slight.					
B	Functional/Structural Groups		X			
Comments:	Lack of grasses & forbs in this area. Mesquite and four wing saltbush dominate the production.					
B	Plant Mortality/Decadence				X	
Comments:	Grasses are largely decadent, shrubs seem to be thriving.					
H B	Litter Amount		X			
Comments:	Litter found in hummocky areas, but the blowouts have little litter.					
B	Annual Production		X			
Comments:	Most production is found in shrubs, very low in grasses and forbs.					
B	Invasive Plants	X				
Comments:	Mesquite is the invasive plant found here. This location would benefit from some kind of control, potentially a mix of mechanical and chemical treatment					

	would be effective. This location is not authorized for livestock, so treatment grazing restrictions are a null consideration.					
B	Reproductive Capability of Perennial Plants			X		
Comments:	Reproductive capability is not limited due to grazing. Drought definitely affecting reproduction. Reproduction may also be limited to a reduced amount of seed sources.					
S	Physical/Chemical/Biological Crusts			X		
Comments:						
B	Wildlife Habitat			X		
Comments:	Wildlife Habitat is being affected by fragmentation by gravel pit activity; it affects big game, grassland birds are probably in decline due to high levels of mesquite.					
B	Wildlife Populations			X		
Comments:	Due to lack of vegetative diversity					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

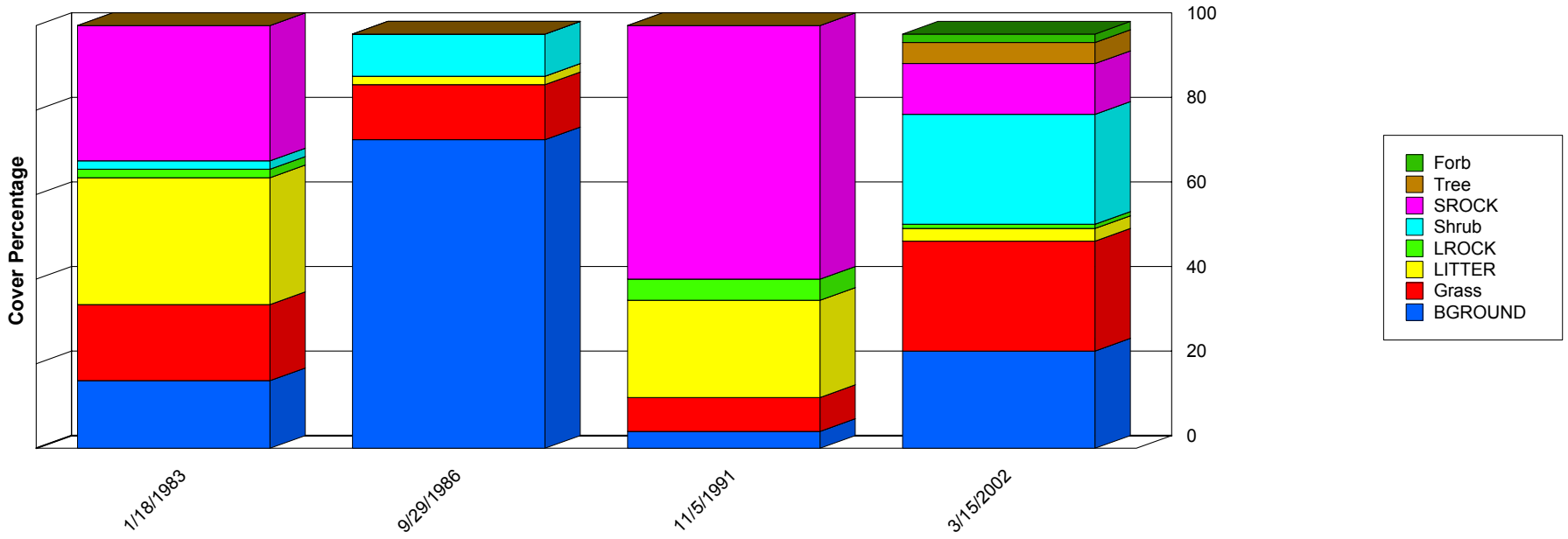
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	1	1	4	2	2
H	Hydrologic	1	2	3	2	2
B	Biotic	1	4	4	2	2

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the

determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.				
Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Numerous factors influence this site: railroad berms, high OHV use, a active Sand & Gravel Operations and soil features themselves. Innerspacing and increasing amount and number of mesquite hummocks are affecting the soil erosion and stability, and water flow patterns. With this decline in soil conditions, plant community composition is becoming more and more limited to invasive shrubs, grasses occur on the hummocks themselves; leaving the innerspaces bare and therefore even more susceptible to degradation by wind or water.	2	4	4
Hydrologic	The Hydologic features are being strongly influenced by the presence of the railroad berm. The berm itself blocks general flow from the west - upslope to the pasture, and then funnels precipitation through culverts or road breaks, therefore increasing flow rates and channelization. The vegetation community has become more and more dominated by mesquite, resulting in decllined hydrologic infiltration rates and flow patterns.	3	3	4
Biotic	Due to the proximity to Roswell, the area lends itself to intense public land use (illegal OHV use, dumping of trash etc.). This in combination with poor soil conditions, hydrologic factors and encroachment by mesquite, has reduced the species composition to almost a static homogenus level of limited plant species. Having a limited number of plant species has had an adverse effect on the wildlife species; only those which utilize mesquite hummocks appear to be present. Grassland species no longer utilize the site; such as pronghorn or deer; grassland birds and small mammals have moved on to areas	5	4	4

	which better supply their needs for cover and food soiurces.			
Site Notes: This study is extremely affected by the influence of active gravel pits, OHV use and high amount of mesquite and mesquite hummocks.				

Ground Cover Trends



	1/18/1983	9/29/1986	11/5/1991	3/15/2002
BGROUND	16.00	73.00	4.00	23.00
Forb	0.00	0.00	0.00	2.00
Grass	18.00	13.00	8.00	26.00
LITTER	30.00	2.00	23.00	3.00
LROCK	2.00	0.00	5.00	1.00
Shrub	2.00	10.00	0.00	26.00
SROCK	32.00	0.00	60.00	12.00
Tree	0.00	0.00	0.00	5.00
Total	100.00	98.00	100.00	98.00

Report Parameters

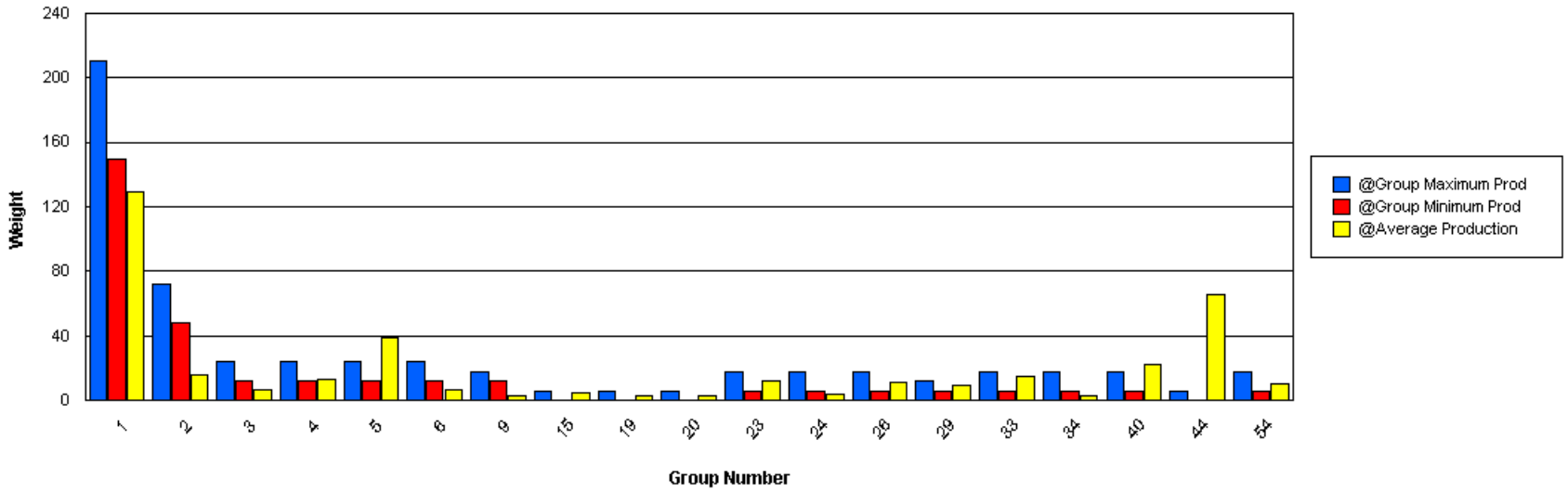
SITE NAME LIKE	64056-#1-F046
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Functional / Structural Groups

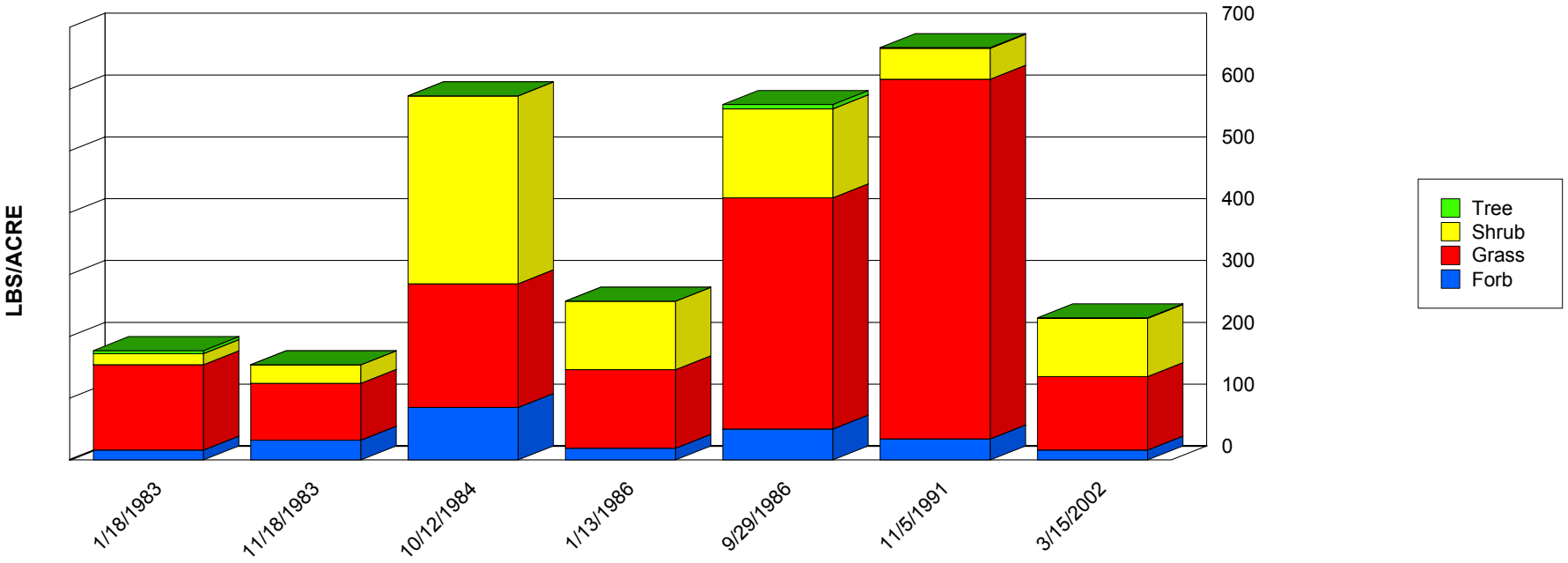
Report Parameters	
SITE NAME LIKE	64056-#1-F046
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY001NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	150	210	24.00	416.00	129.57	123.57
2	Grass	MUPO2	48	72	0.00	39.00	15.50	15.02
3	Grass	SEMA5	12	24	0.00	18.00	7.00	7.87
4	Grass	BOCU	12	24	0.00	47.00	13.00	15.66
5	Grass	ARIST	12	24	6.00	73.00	39.00	22.75
6	Grass	TRMU	12	24	0.00	21.00	6.29	8.36
8	Grass	BOHI2	12	18	0.00	3.00	1.00	1.41
9	Grass	SPCR	12	18	0.00	11.00	3.17	4.10
13	Grass	TRPI2	0	6	0.00	4.00	1.43	1.68
14	Grass	MUAR	0	6	0.00	8.00	2.00	3.46
15	Grass	ERPU8	0	6	0.00	19.00	5.29	6.18
19	Grass	MUAR2	0	6	0.00	17.00	3.43	5.75
20	Grass	PAHA	0	6	0.00	9.00	3.00	4.24
21	Grass	PARA2	6	12	0.00	8.00	1.50	2.93
22	Grass	SPFL2	0	6	0.00	10.00	2.71	3.57
23	Grass	BOSA	6	18	0.00	1.00	0.20	0.40
23	Grass	LECO	6	18	0.00	32.00	11.75	13.20
24	Forb	LESQU	6	18	0.00	7.00	4.00	2.77
26	Forb	CROTO	6	18	5.00	25.00	11.57	6.37
29	Forb	DYPE	6	12	0.00	19.00	9.50	9.50
33	Forb	AAFF	6	18	0.00	58.00	14.86	20.26
33	Forb	PECTI	6	18	0.00	2.00	0.33	0.75
34	Forb	CHCO	6	18	0.00	2.00	0.40	0.80
34	Forb	ERIOG	6	18	0.00	2.00	0.50	0.76
34	Forb	HYSC2	6	18	0.00	3.00	0.60	1.20
34	Forb	MELE2	6	18	0.00	6.00	1.67	2.13

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
39	Shrub	MIMOS	6	18	0.00	4.00	1.33	1.89
40	Shrub	LADI2	6	18	0.00	101.00	22.14	33.51
41	Shrub	EPHED	6	18	1.00	3.00	2.00	1.00
41	Shrub	EPTO	6	18	0.00	0.00	0.00	0.00
44	Shrub	GUSA2	0	6	10.00	203.00	65.71	66.54
54	Tree	ACGR	6	18	0.00	7.00	2.00	2.62
54	Shrub	PRGL2	6	18	0.00	34.00	8.43	11.34



Production Lbs/Acre Trends



	1/18/1983	11/18/1983	10/12/1984	1/13/1986	9/29/1986	11/5/1991	3/15/2002
Forb	**16.00**	**32.00**	**85.00**	**19.00**	**50.00**	**34.00**	**16.00**
Grass	**138.00**	**92.00**	**200.00**	**127.00**	**374.00**	**582.00**	**119.00**
Shrub	**18.00**	**30.00**	**304.00**	**111.00**	**144.00**	**50.00**	**94.00**
Tree	**5.00**	**0.00**	**0.00**	**0.00**	**7.00**	**1.00**	**1.00**
Total	**177.00**	**154.00**	**589.00**	**257.00**	**575.00**	**667.00**	**230.00**

Report Parameters

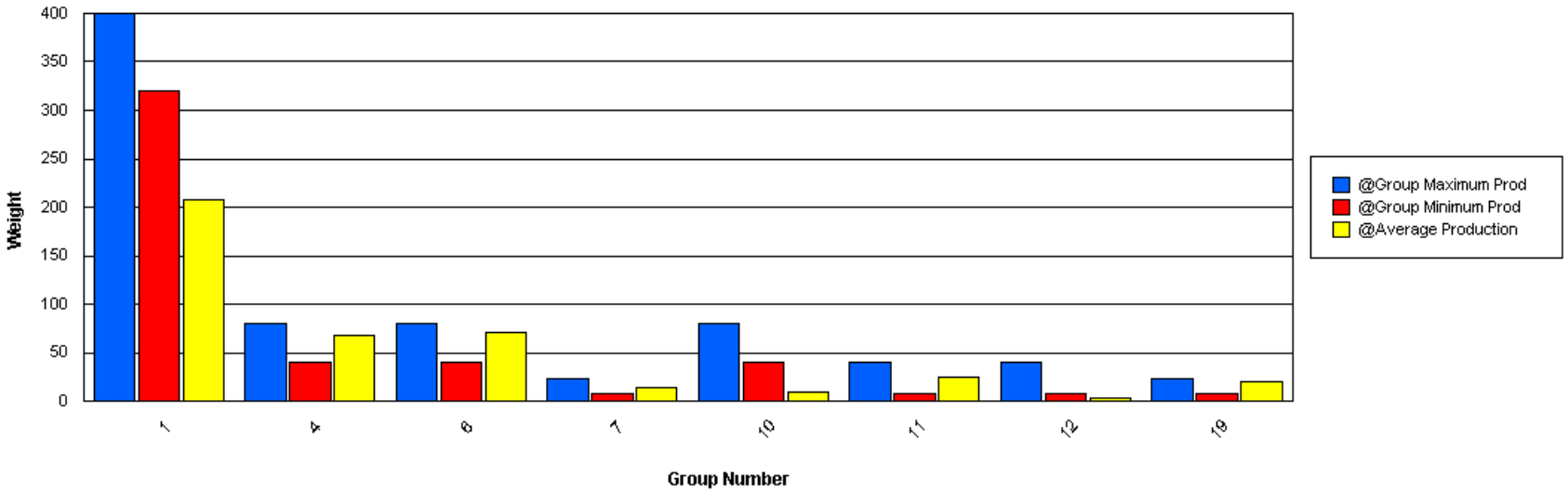
SITE NAME LIKE	64056-#1-F046
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Functional / Structural Groups

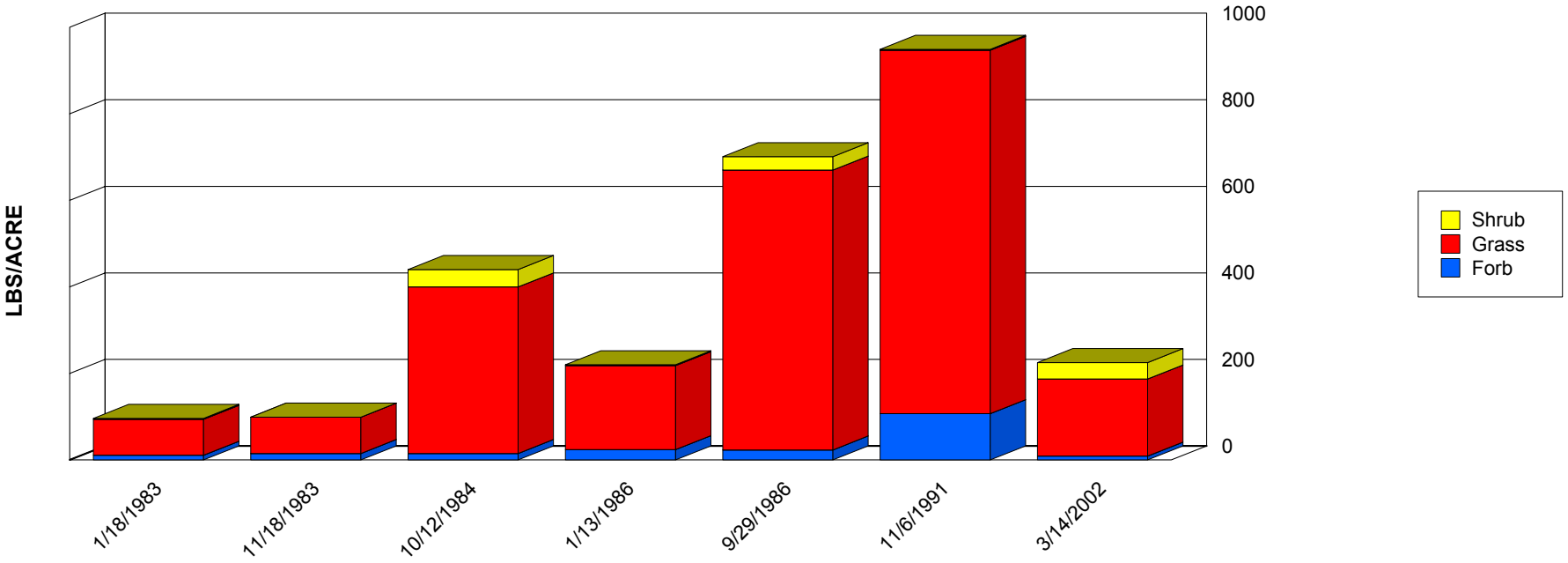
Report Parameters	
SITE NAME LIKE	64056-#2-F047
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY036NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	SPAI	320	400	46.00	518.00	207.14	162.02
2	Grass	PAOB	40	80	0.00	6.00	2.33	2.62
4	Grass	SPCO4	40	80	0.00	11.00	2.20	4.40
4	Grass	SPCR	40	80	0.00	86.00	21.50	37.24
4	Grass	SPNE	40	80	0.00	56.00	18.33	19.01
4	Grass	SPORO	40	80	0.00	69.00	25.40	31.30
6	Grass	HIMU2	40	80	0.00	222.00	70.57	95.90
7	Grass	LECO	8	24	0.00	11.00	2.75	4.76
7	Grass	MUAR	8	24	0.00	56.00	11.00	18.55
10	Forb	COCA2	40	80	0.00	14.00	3.50	5.35
10	Forb	COLDE	40	80	4.00	9.00	6.50	2.50
10	Forb	PENA	40	80	0.00	1.00	0.33	0.47
11	Forb	AAFF	8	40	0.00	88.00	17.29	29.61
11	Forb	DYPE	8	40	0.00	22.00	7.33	10.37
11	Forb	PECTI	8	40	0.00	1.00	0.17	0.37
11	Forb	PHACE	8	40	0.00	1.00	0.17	0.37
12	Forb	ERIOG	8	40	0.00	1.00	0.33	0.47
12	Forb	HOGL2	8	40	0.00	0.00	0.00	0.00
12	Forb	LEMO2	8	40	0.00	6.00	3.00	3.00
12	Forb	LEPID	8	40	0.00	1.00	0.17	0.37
19	Shrub	COCA17	8	24	0.00	28.00	14.00	14.00
19	Shrub	OPUNT	8	24	0.00	40.00	7.00	13.51

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

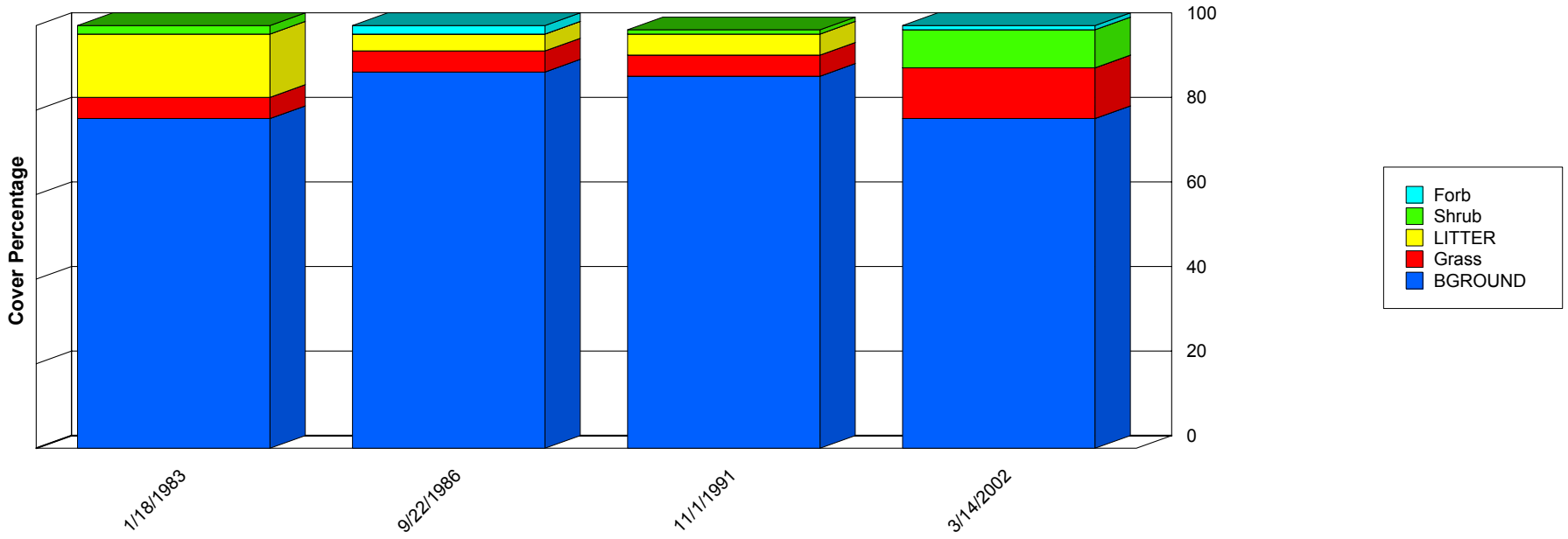


	1/18/1983	11/18/1983	10/12/1984	1/13/1986	9/29/1986	11/6/1991	3/14/2002
Forb	**11.00**	**15.00**	**15.00**	**24.00**	**23.00**	**107.00**	**9.00**
Grass	**83.00**	**84.00**	**385.00**	**194.00**	**647.00**	**840.00**	**178.00**
Shrub	**2.00**	**0.00**	**40.00**	**2.00**	**31.00**	**2.00**	**38.00**
Total	**96.00**	**99.00**	**440.00**	**220.00**	**701.00**	**949.00**	**225.00**

Report Parameters

SITE NAME LIKE	64056-#2-F047
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Ground Cover Trends

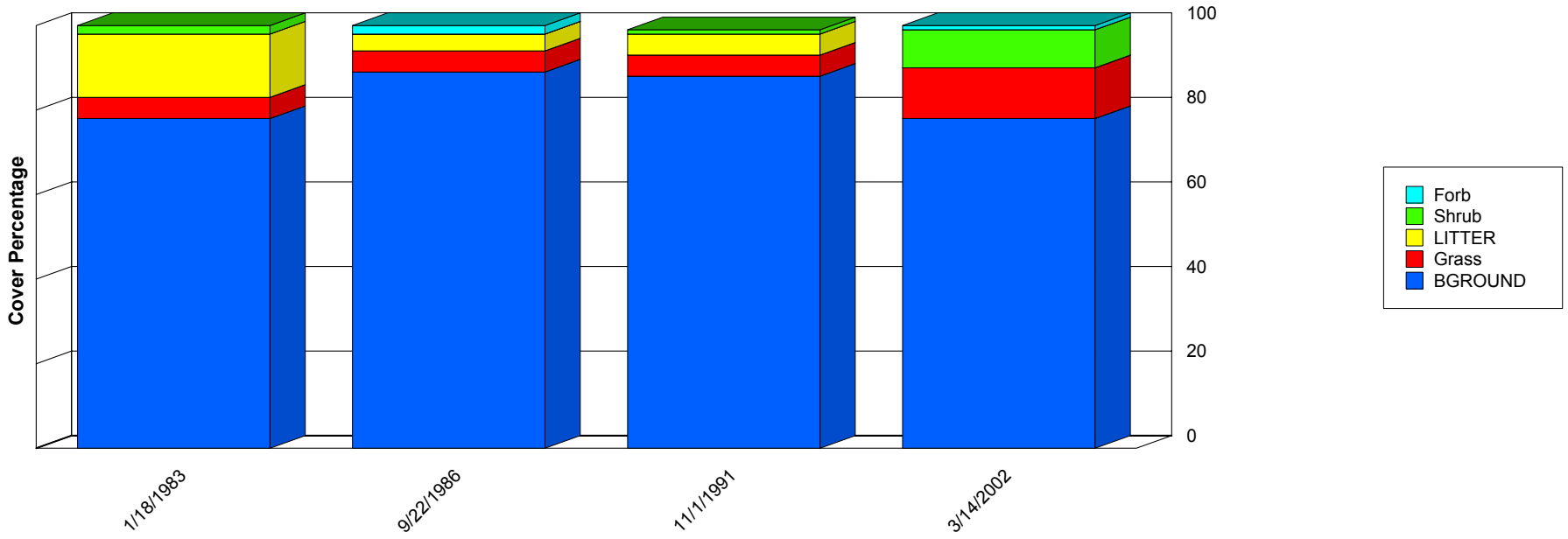


	1/18/1983	9/22/1986	11/1/1991	3/14/2002
BGROUND	78.00	89.00	88.00	78.00
Forb	0.00	2.00	0.00	1.00
Grass	5.00	5.00	5.00	12.00
LITTER	15.00	4.00	5.00	0.00
Shrub	2.00	0.00	1.00	9.00
Total	100.00	100.00	99.00	100.00

Report Parameters

SITE NAME LIKE	64056-#3-F048
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Ground Cover Trends



	1/18/1983	9/22/1986	11/1/1991	3/14/2002
BGROUND	78.00	89.00	88.00	78.00
Forb	0.00	2.00	0.00	1.00
Grass	5.00	5.00	5.00	12.00
LITTER	15.00	4.00	5.00	0.00
Shrub	2.00	0.00	1.00	9.00
Total	100.00	100.00	99.00	100.00

Report Parameters

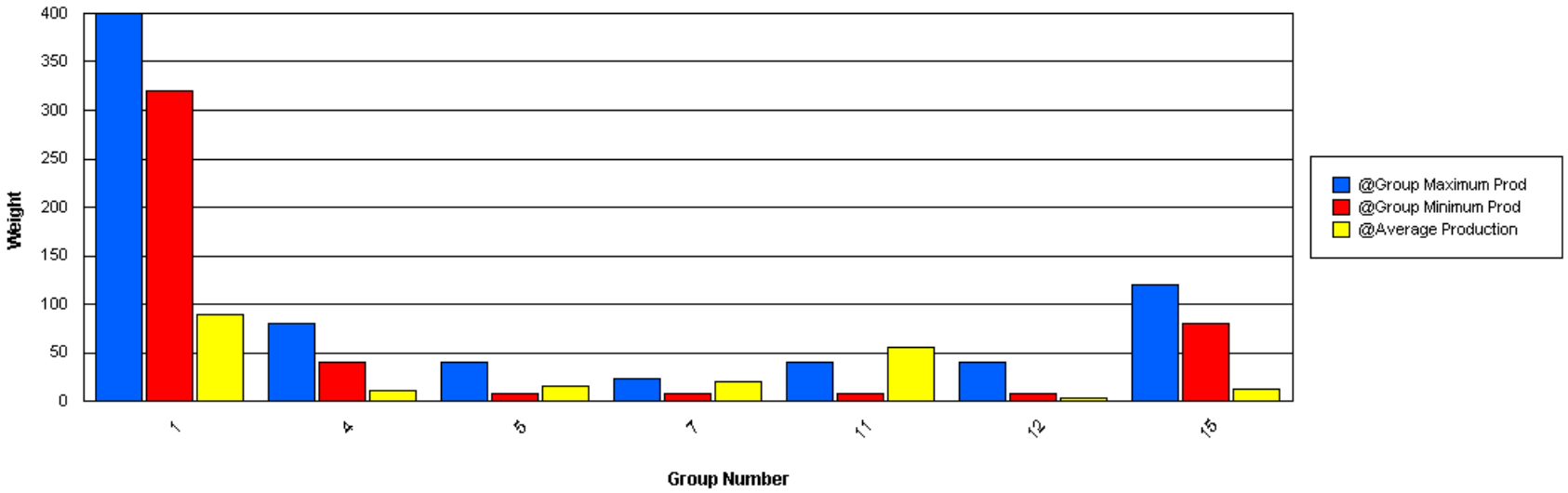
SITE NAME LIKE	64056-#3-F048
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Functional / Structural Groups

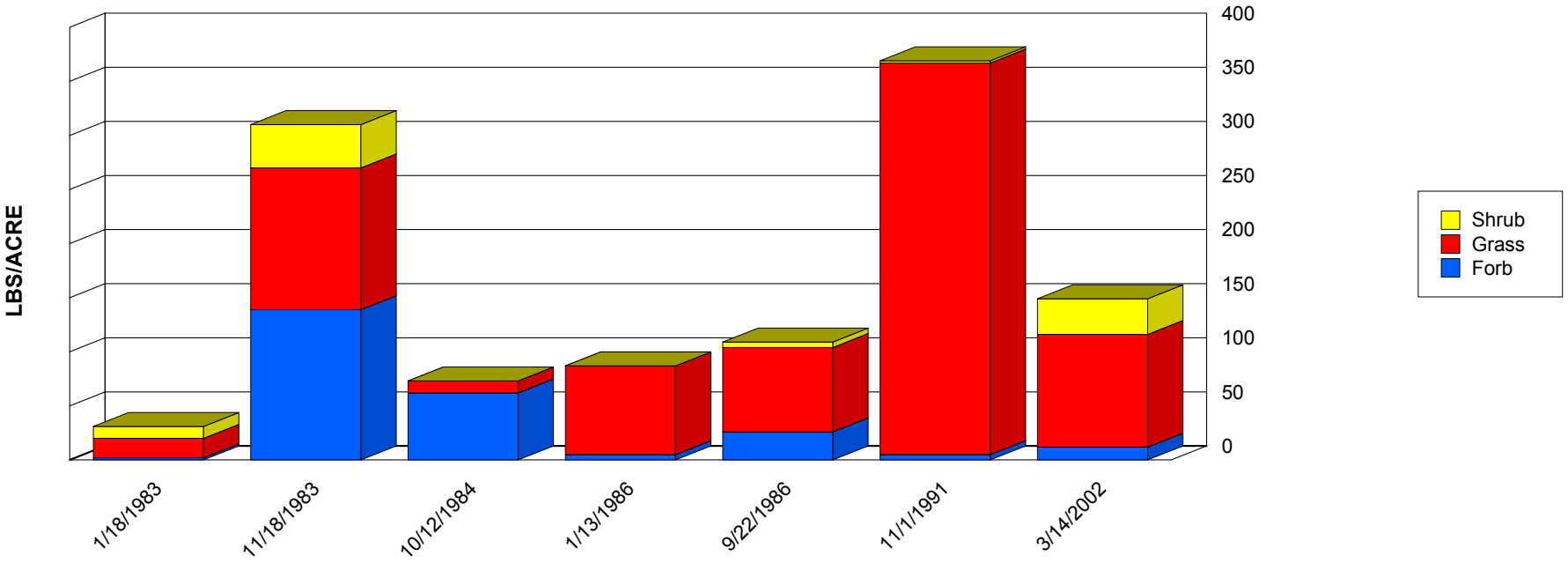
Report Parameters	
SITE NAME LIKE	64056-#3-F048
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY036NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	SPAI	320	400	0.00	342.00	90.14	111.49
4	Grass	SPCR	40	80	0.00	32.00	10.67	15.08
5	Grass	DISP	8	40	0.00	8.00	1.33	2.98
5	Grass	DIST	8	40	10.00	21.00	14.60	4.84
7	Grass	LECO	8	24	5.00	9.00	7.00	2.00
7	Grass	MUAR	8	24	0.00	28.00	14.00	14.00
11	Forb	AAFF	8	40	0.00	62.00	16.75	26.20
11	Forb	PORTU	8	40	0.00	139.00	27.80	55.60
11	Forb	SALIC	8	40	0.00	23.00	11.50	11.50
12	Forb	ERIOG	8	40	0.00	12.00	3.14	4.02
15	Shrub	ALOC2	80	120	0.00	40.00	12.29	15.84
19	Shrub	TAMAR2	8	24	0.00	5.00	2.50	2.50

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

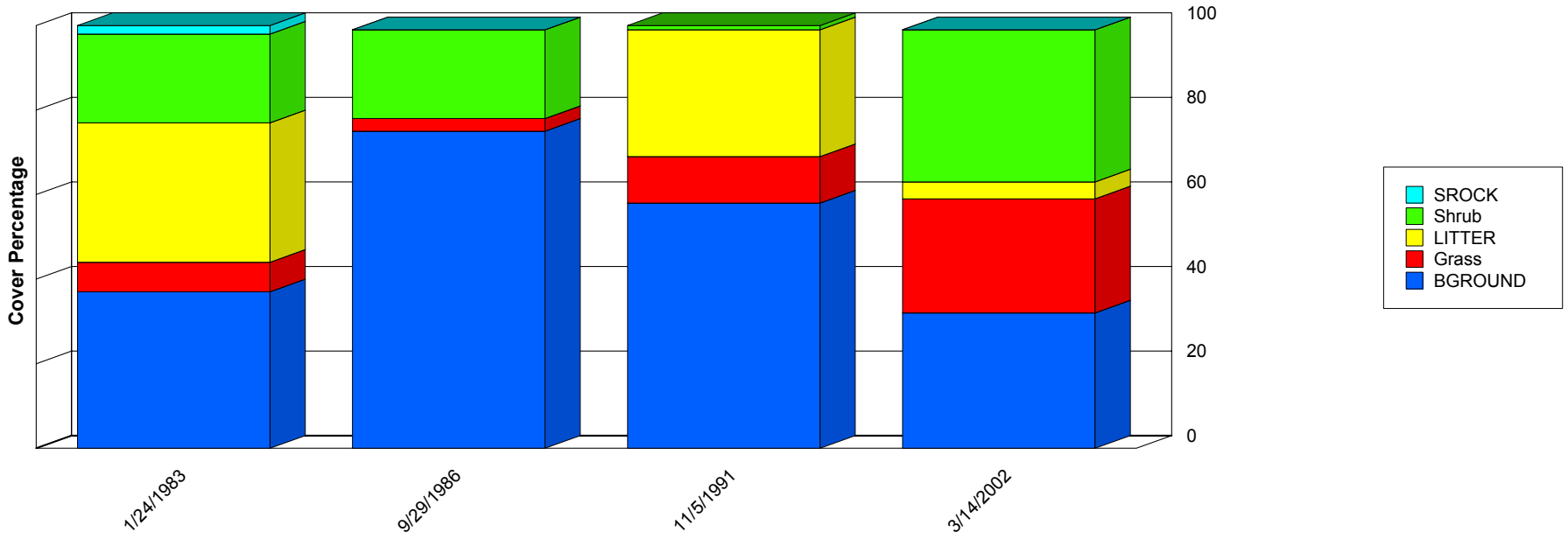


	1/18/1983	11/18/1983	10/12/1984	1/13/1986	9/22/1986	11/1/1991	3/14/2002
Forb	**2.00**	**139.00**	**62.00**	**5.00**	**26.00**	**5.00**	**12.00**
Grass	**18.00**	**131.00**	**11.00**	**82.00**	**78.00**	**362.00**	**104.00**
Shrub	**11.00**	**40.00**	**0.00**	**0.00**	**5.00**	**2.00**	**33.00**
Total	**31.00**	**310.00**	**73.00**	**87.00**	**109.00**	**369.00**	**149.00**

Report Parameters

SITE NAME LIKE	64056-#3-F048
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Ground Cover Trends



	1/24/1983	9/29/1986	11/5/1991	3/14/2002
BGROUND	37.00	75.00	58.00	32.00
Grass	7.00	3.00	11.00	27.00
LITTER	33.00	0.00	30.00	4.00
Shrub	21.00	21.00	1.00	36.00
SROCK	2.00	0.00	0.00	0.00
Total	100.00	99.00	100.00	99.00

Report Parameters

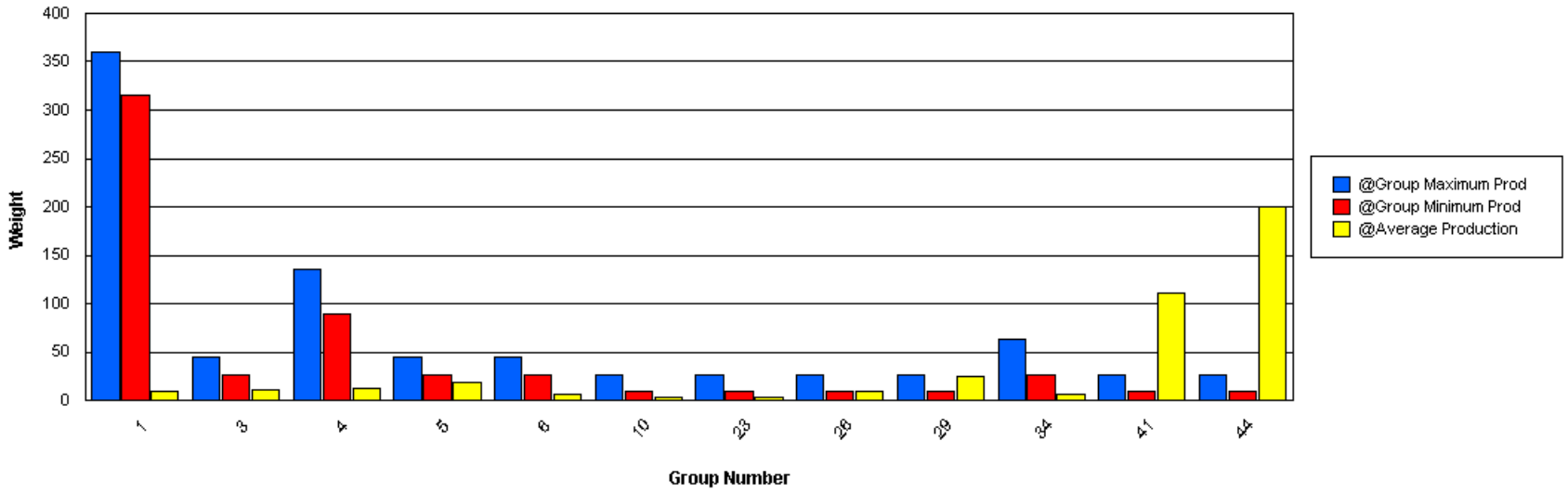
SITE NAME LIKE	64056-#4-F049
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Functional / Structural Groups

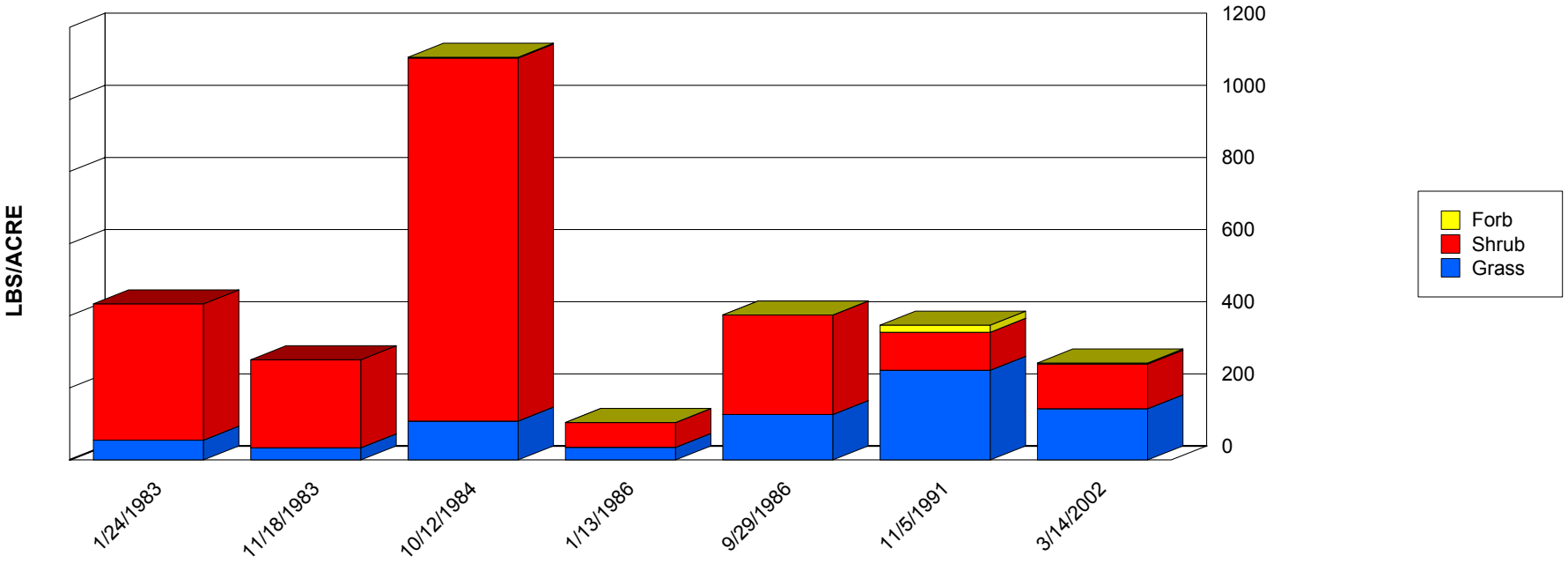
Report Parameters	
SITE NAME LIKE	64056-#4-F049
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY004NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	315	360	0.00	21.00	10.17	7.82
3	Grass	MUPO2	27	45	0.00	40.00	11.86	12.49
4	Grass	SPCR	90	135	0.00	29.00	8.71	10.14
4	Grass	SPFL2	90	135	0.00	21.00	4.14	7.41
5	Grass	ARIST	27	45	0.00	56.00	19.00	18.87
6	Grass	SEMA5	27	45	0.00	18.00	6.00	6.87
10	Grass	HIMU2	9	27	0.00	14.00	4.17	5.05
22	Grass	MUAR	9	27	0.00	1.00	0.33	0.47
23	Grass	MUAR2	9	27	0.00	6.00	3.67	2.62
26	Grass	SCBR2	9	27	0.00	25.00	10.29	7.59
28	Grass	STNE2	9	27	0.00	2.00	0.67	0.94
29	Grass	ERPU8	9	27	0.00	33.00	9.71	11.07
29	Grass	SETAR	9	27	0.00	61.00	15.25	26.41
32	Forb	LESQU	27	63	0.00	2.00	0.50	0.87
34	Forb	AAFF	27	63	0.00	20.00	6.67	9.43
39	Shrub	ATCA2	9	27	0.00	12.00	2.86	4.16
41	Shrub	GUSA2	9	27	16.00	523.00	111.43	169.70
44	Shrub	PRGL2	9	27	24.00	484.00	200.43	154.62

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends



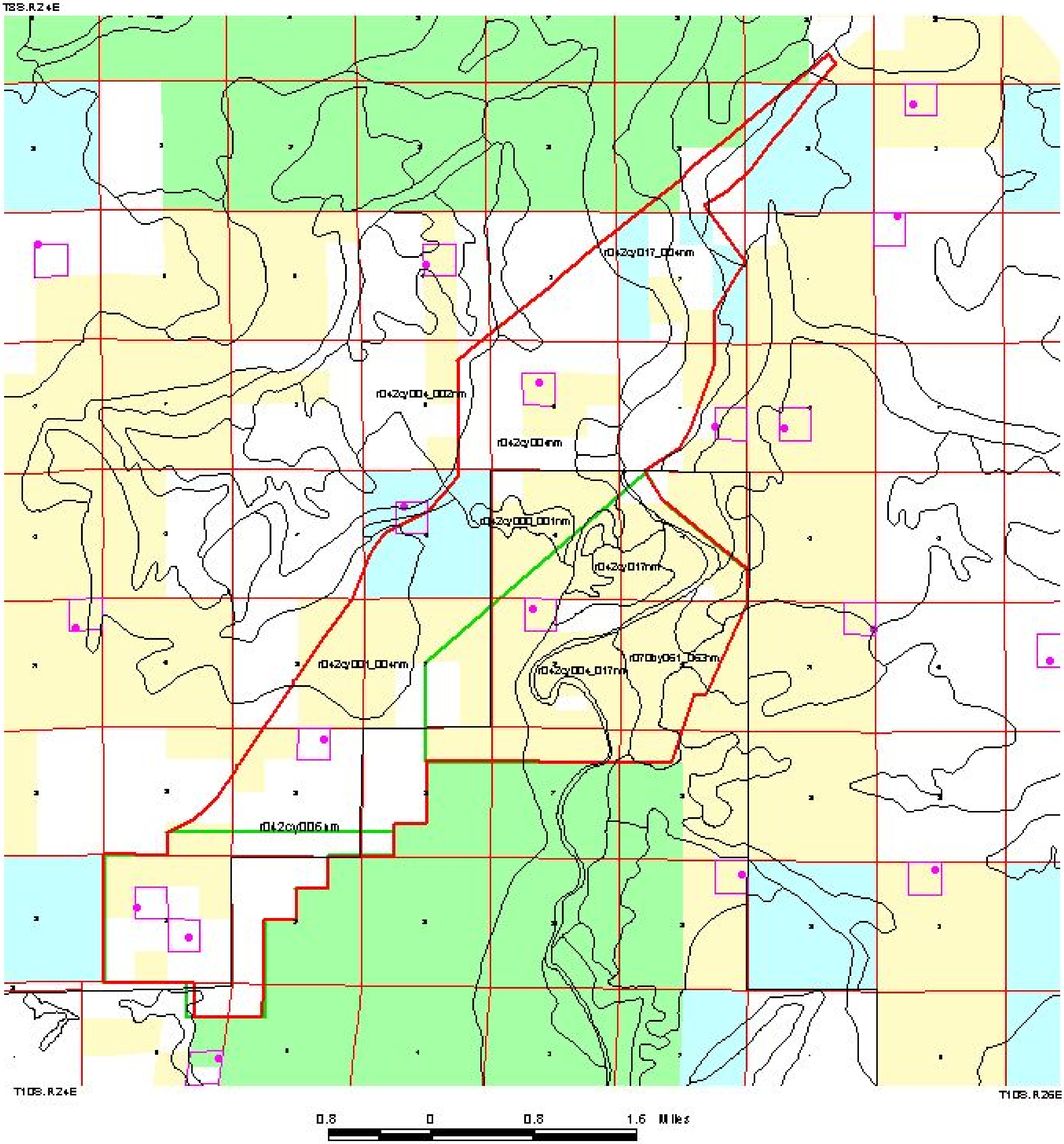
	1/24/1983	11/18/1983	10/12/1984	1/13/1986	9/29/1986	11/5/1991	3/14/2002
Forb	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**	**20.00**	**3.00**
Grass	**55.00**	**34.00**	**108.00**	**35.00**	**126.00**	**249.00**	**142.00**
Shrub	**378.00**	**244.00**	**1,007.00**	**69.00**	**276.00**	**105.00**	**124.00**
Total	**433.00**	**278.00**	**1,117.00**	**104.00**	**402.00**	**374.00**	**269.00**

Report Parameters

SITE NAME LIKE	64056-#4-F049
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

Rangeland Health Assessment
Ecological Sites

Allotment 64056

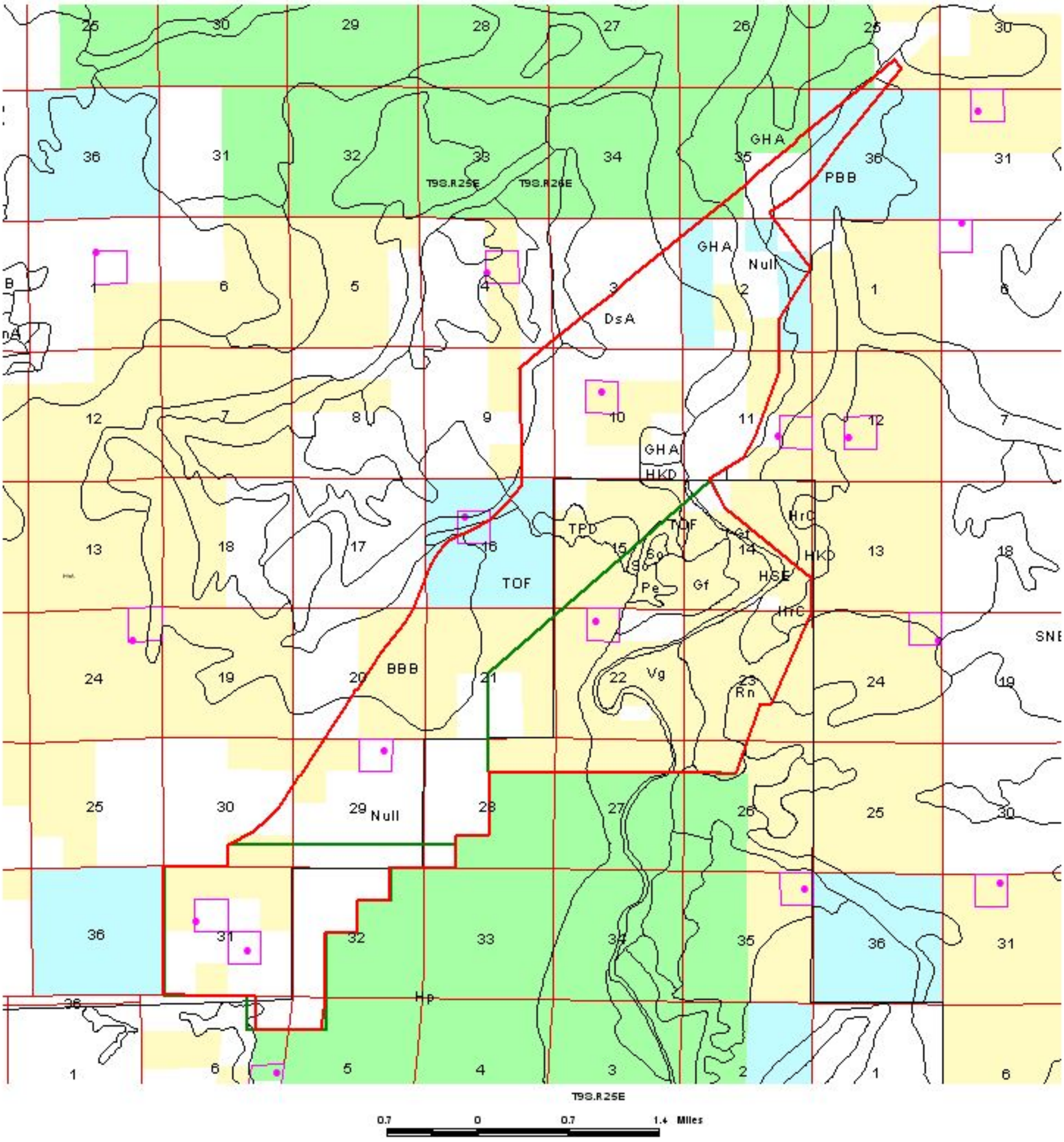


Public
Study Locations
FWS
State
Private
Study Plots

Pasture Boundary
Ecological Site Boundary
Allotment Boundary

Produced by the Roswell Field Office
GIS Intern on June 30, 2003.

Rangeland Health Assessment
Soil Mapping Units
Allotment - 64056



Study Plots
40 Acres

Study Locations

State | Private | Public | FWS

Allotment Boundary

Pasture Boundary

Soil Mapping Units

Produced by the Roswell Field Office
GIS Specialist on June 30, 2003.

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